IN THE CLAIMS

1. (Currently amended) A micro-mirror for deflecting an incident light, comprising:

a mirror section for reflecting an incident light at a relative angle;

a hinge section including a fixed section and a movable section each having a flat surface; said mirror section and said hinge section being integrally formed such that said mirror section extends from said movable section of the hinge section and is formed slanted to said flat surface of the movable section of the hinge section; and

a drive means having a bi-morph structure made of two or more of materials having different heat expansion coefficient for deflecting said mirror section to change the relative angle to said incident light.

2. (Previously presented) The micro-mirror of claim 1, said mirror section is slanted by approximately 55 degrees to said flat surface of the movable section of the hinge section.

3. (Previously presented) The micro-mirror of claim 1, wherein

said drive means includes:

a first drive film provided on one of surfaces of said moving section of the hinge section, and

a second drive film provided on another of the surfaces of said moving section and having larger thermal coefficient than said first drive film.

4. (Previously presented) The micro-mirror of claim 3, wherein

said first drive film and second drive film are made from different types of conductive materials to each other.

5. (Previously presented) The micro-mirror of claim 4, wherein

said first drive film is a poly-crystal silicon film including impurities, and

said second drive film is an aluminum film.

6. (Previously presented) The micro-mirror of claim 3, wherein

said first drive film and second drive film are made from the same types of materials having different resistance to each other.

7. (Previously presented) The micro-mirror of claim 1, wherein

said hinge section and said mirror section are integrally constructed on a structured film formed on a semiconductor substrate.

8. (Previously presented) The micro-mirror of claim 7, wherein

said semiconductor substrate is a silicon substrate.

9. (Previously presented) The micro-mirror of claim 7, wherein

said fixed section and movable section of the hinge section are formed on a first crystalline surface of a silicon substrate respectively, and

said mirror section is formed on a second crystalline surface of said silicon substrate.

10. (Previously presented) The micro-mirror in claim 9, wherein

said hinge section is fixed to said silicon substrate by said fixed section.

11. (Previously presented) The micro-mirror of claim 7, wherein

said structured film includes a nitride film.

12. (Previously presented) The micro-mirror of claim 11, wherein

said movable section and said mirror section of said hinge section are made only by a thin film of said nitride film.

13. (Currently amended) A scanner device comprising:

a light emitting device;

a mirror section for reflecting an input incident light from said light emitting device at a relative angle;

a hinge section including a fixed section and a movable section each having a flat surface, said mirror section and said hinge section being integrally formed such that said mirror section extends from said movable section of the hinge section and is formed slanted to said flat surface of the movable section of the hinge section; and

a micro-mirror equipped with a drive means having a bi-morph structure made of two or more of materials having different heat expansion coefficient for deflecting said mirror section to change the relative angle to said incident light; and

an optical detector for detecting a return light of a light irradiated by reflecting at said mirror section.

14. (Previously presented) The scanner device of claim 13, wherein

said hinge section and said mirror section are integrally constructed on a structured film formed on a semiconductor substrate; and

said optical detector is formed on said silicon substrate.

15. (Currently amended) A method for fabricating a micro-mirror which comprises:

a mirror section for reflecting an incident light at a relative angle;

a hinge section including a fixed section and a movable section each having a flat surface; and

a drive means having a bi-morph structure made of two or more of materials having different heat expansion coefficient for deflecting said mirror section of the relative angle to said incident light; wherein

said hinge section and the mirror section are integrally constructed by a structured film formed on a semiconductor substrate by utilizing crystal anisotropy of said semiconductor substrate such that said mirror section extends from said movable section of the hinge section and is formed slanted to said flat surface of the movable section of the hinge section.

16. (Previously presented) The method for fabricating the micro-mirror of claim 15, wherein;

said movable section of the hinge section is so formed as to be continuous from said fixed section of the hinge section and is formed so as to construct a bent slanting surface at an extended section of the fixed section of the hinge section.

17. (Previously presented) The method for fabricating the micro-mirror of claim 16, further comprising the steps of:

forming a first groove having a first skewed surface at a side wall section on a front surface of said semiconductor substrate, and a second groove having a second skewed surface substantially parallel to said first skewed surface of the first groove at a position and opposite to a flat surface section around said first groove on a back surface of said semiconductor substrate;

forming structured films at said first skewed surface of the first groove and said flat surface section around said first groove;

forming a first drive film at one surface of said structured film;

forming said mirror section and said hinge section made of the structured film by removing said semiconductor substrate with etching process after performing a through-hole etching of said semiconductor substrate to make one end of said structured film to be a free end at a bottom section of said first groove; and

forming a second drive film on another surface of the structured film constructing said hinge section.

18. (Previously presented) The method for fabricating the micro-mirror of claim 17, wherein

an-isotropic etching is performed to said first groove and said second groove after forming said first groove on the front surface of the semiconductor substrate and said second groove on the back surface of the semiconductor substrate.

19. (Previously presented) The method for fabricating the micro-mirror of claim 18, wherein

said an-isotropic etching is performed using a mask formed by patterning a photo-resist film by UV ray projection exposure method, wherein said photo-resist film is uniformly formed in thickness by a spray method.

20. (Previously presented) A method for fabricating the micro-mirror which comprises wherein further comprising the steps of:

a mirror section for reflecting an incident light;

a hinge section including a fixed section and a movable section each having a flat surface;

a drive means having a bi-morph structure made of two or more of materials having different heat expansion coefficient for deflecting said mirror section of a relative angle to said incident light; wherein

said hinge section and the mirror section are integrally constructed by a structured film formed on a semiconductor substrate by utilizing crystal anisotropy of said semiconductor substrate;

said movable section of the hinge section is so formed as to be continuous from said fixed section of the hinge section and is formed so as to construct a bent slanting surface at an extended section of the fixed section of the hinge section;

forming a first groove having a first skewed surface at a side wall section on a front surface of said semiconductor substrate, and a second groove having a second skewed surface substantially parallel to said first skewed surface of the first groove at a position and opposite to a flat surface section around said first groove on a back surface of said semiconductor substrate;

forming structured films at said first skewed surface of the first groove and said flat surface section around said first groove;

forming a first drive film at one surface of said structured film;

forming said mirror section and said hinge section made of the structured film by removing said semiconductor substrate with etching process after performing a through-hole

etching of said semiconductor substrate to make one end of said structured film to be a free end at a bottom section of said first groove; and

forming a second drive film on another surface of the structured film constructing said hinge section;

forming a metal film on said structured film constructing said mirror section and the hinge section; and

forming a reflection film and an electrode pad for supplying current to said reflection film by selectively etching said metal film.

21. (Previously presented) The method for fabricating the micro-mirror of claim 20, wherein

a patterned photo-resist obtained by patterning the photo-resist film uniformly formed in thickness by the spray method by projection exposure apparatus is used as a mask upon forming said reflection mirror and the electrode pad.

22. (Previously presented) The method for fabricating the micro-mirror of claim 17, wherein

a silicon substrate is employed as said semiconductor substrate[,].

23. (Previously presented) The method for fabricating the micro-mirror of claim 22, wherein

said fixed section and the movable section of the hinge section are formed on a first crystal surface of the silicon substrate; and

said mirror section is formed on a second crystal surface of the silicon substrate.

24. (Previously presented) The method for fabricating the micro-mirror of claim 22, wherein

a nitride film is formed as said structured film at said first groove and a flat space around said first groove.

25. (Previously presented) The method for fabricating the micro-mirror of claim 24, wherein

said silicon substrate of the hinge section is selectively removed only to leave said nitride film at the hinge section.

26. (Previously presented) The method for fabricating the micro-mirror of claim 22, wherein

said hinge section and the mirror section are formed by an etching process using Potassium Hydroxide, Hydrazine, Ethylene-Diamine-Pyrocatechol Water, or Tetra-Methyl Ammonium Hydroxide.